

Sweet Clover Seed Production

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The production of sweet clover seed in Clark County began in 1921 by a farmer who harvested 13 acres with a grain binder after it had been pastured rather heavily with cattle. The field made 25 bushels which sold for eight dollars per bushel. The same method tried in fields that had not been pastured with live stock grew so rank that a binder could not handle it. A demand for home grown seed brought a study of other methods of harvesting the seed.

Since the seed shatters easily, forms of beater type machines were developed. The first one, built by a farmer, was a large box on which was attached a reel that was driven by a chain from the drive wheel of the tractor. It was successful but expensive to build and could be operated only with tractors. Another beater made to push ahead of horses proved impractical. In 1924 the vocational agriculture department of the Casey Township High School constructed the binder type beater which can be drawn by horses or tractor. This machine was made on the frame of a discarded 6-foot binder. It beats the seed into a cage and drags the plants down to be plowed under for fertilizer. The cost of construction varies from thirty to fifty dollars.

The time to harvest sweet clover seed with a beater type machine is when the greatest amount of ripe seed is found on the plants. This is hard to determine since the seed does not always ripen evenly. Too early harvesting gives much green seed of poor quality, yet waiting for more to ripen permits some of the earlier plumper seed to be shattered. The seed is beaten onto an enclosed platform and is removed from the harvester at one end of the field through a door at the rear of the machine into a large flat box where it is run through $\frac{1}{4}$ -inch hardware cloth into a wagon box to remove the coarser trash and leaves. The seed should be spread on a floor to a depth of not more than 6 to 10 inches, depending upon the amount of green material, and should dry for two weeks when it may be bunched or cleaned with a fanning mill and hulled if desired. Very little seed is hulled now except that sold to seed dealers.

Sweet clover seed that is to be hulled and scarified is usually run through a machine which blows the seed against sand paper. Regular threshing machines and Letz feed grinders are sometimes used. One hundred pounds of good clean seed in the hull will make from 70 to 75 pounds of seed when hulled, depending upon the quality.

The yield of seed varies with weather conditions and types of soil. Our largest yield was eight bushels of scarified seed per acre in 1926 from a 5-acre patch. Other yields have varied from nothing to 5 bushels, and the average is about 2 to 4 bushels. We have never determined the amount of seed that is shattered on the ground by harvesting, but when followed by wheat a fine stand of volunteer clover is obtained.

Only the large white blossom biennial is grown in our section where it is true to type and generally free from disease. Other varieties have not given satisfactory results. We need a strain of the large white blossom

biennial which will mature at least a month later than it does at present, providing a pasture period for live stock through the driest part of the season when it is most needed.

The vitality of the seed deteriorates after it is hulled and scarified, depending upon the severity of scarification. Seed three years old has turned a reddish-brown and when sown in the field gives a poor stand. The unhulled seed retains its vitality much longer, as shown by germination tests made on seed that was ten years old when hulled and scarified. When all our seed came from the northwest, only hulled and scarified seed was sown because the seed coat was so hard that moisture could not penetrate and very poor stands resulted from unhulled seed. About 1925 farmers began seeding unhulled seed with winter wheat during the last of February and the first of March at the rate of 15 pounds per acre, obtaining good stands, but hulled and scarified seed sown in wheat at the same time germinated more readily and was frozen. Sowing unhulled seed with oats after all freezing and thawing is over is being practiced by more than half the farmers of our community with good results. It may be that after being grown under our more humid conditions the plant has become acclimated to such an extent that the seed coat is softer than on seed produced in the northwest.

Types of soil and weather conditions play an important part in the production of sweet clover seed. Clover fields which ripen evenly and hold the seed always produce the best yields even if the stands are not so good. Clover with these characteristics is usually found on the poorer type of soil, as gray silt loam. In fields with good brown silt loam soil you will find good stands with ripe seed, green seed, and bloom all on the same plant, so that there is never a time when seed can be harvested. The product is either of poor quality large red seed which is worthless or immature seed which will not grow.

Weather is important. A day of strong wind when a field is ripe may shatter the seed so badly that it is not worth beating off. Rains ten days to two weeks before the seed begins to ripen (on clover grown on gray silt loam), cause the plants to start reblooming and the seed aborts as it ripens. Rainy seasons give the same results.

In conclusion it may be said that sweet clover seed can be produced economically when grown on gray silt loam provided there are no heavy rains ten days before the seed ripens and no strong winds at harvest time. The seed should be harvested with a binder type beater. One of the greatest benefits that can come to a live stock producer is for some one to develop a strain of sweet clover which will mature one month later than our large white blossom biennial matures at the present time.